

Sannantha crenulata Fern-leaf Baeckea

Taxonomy

Sannantha crenulata (F. Muell.) Peter G. Wilson

The taxon was previously known as *Baeckea crenatifolia* F.Muell. and *Babingtonia crenulata* (F.Muell.) A.R.Bean

Current conservation status

Listed as Vulnerable under the *Environment Protection and Biodiversity Conservation Act 1999*.

Listed as threatened under the *Flora and Fauna Guarantee Act 1988* as *Babingtonia crenulata* (SAC 2000).

Categorised as Vulnerable in the 2014 Advisory list of rare or threatened flora (DEPI 2014).

Proposed conservation status

Endangered in Australia

Criteria B1ab(iii,v)+2ab(iii,v); C1+2a(ii)

Species Information

Description and Life History

Erect shrub 1-3 m high. Leaves ovate to orbicular, spreading, 3-7 mm long, 2-5 mm wide, obtuse; margins crenulate. Flowers 2 or 3 in axillary umbels, white (rarely pale pink), to 8 mm across; peduncle as long as or longer than leaf; pedicel to 8 mm long; hypanthium obconical; calyx-lobes broad; petals orbicular, 2-4 mm long; stamens 10-15, none opposite petals, each with a small gland, filaments straight; ovary 3-celled. Fruit cup-like, brown, c. 3 mm diam. Flowers Nov.-Mar.

Now understood to regenerate from seed after fire. Other localised disturbance such as flood or frost heave may stimulate germination.

Generation Length

The generation length of *Sannantha crenulata* is estimated to be 30 to 50 years. Fire is historically rare in alpine ecosystems, occurring perhaps once or twice a century and, on average, perennial shrubs and herbs are likely to reach the end of their reproductive life prior to another fire. In undisturbed vegetation, the average plant age is likely to be at the older end of the estimated lifespan, reflecting the recruitment pulse after fire and lower-level recruitment thereafter.

Distribution

The taxon is endemic to Victoria, where it is restricted to rocky streamsides on the lower slopes of Mt Buffalo.

Habitat

The taxon occurs in open forest and riparian scrub or on rocky outcrops in shallow gravelly loam soils on granite parent material, at an altitude range of c. 300-1150 m.

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Threats

Threats include altered fire frequency, as large fires are becoming more frequent and two fires at a short interval will be particularly detrimental. Weeds such as *Lonicera japonica*, *Rubus discolor*, *R. fruitucosus* sp. agg., *Leycesteria formosa* and *Salix cinerea* are recorded from the known range of this taxon. Feral animals such as deer may damage plants. Roadworks, particularly near the park entrance, may impact this taxon. Pathogens such as *Phytophthora cinnamomi* are known to impact related taxa and may impact this one, particularly with potentially increased soil temperatures.

IUCN Criteria

Criterion A. Population size reduction. Population reduction (measured over the longer of 10 years or 3 generations) based on any of A1 to A4			
	Critically Endangered	Endangered	Vulnerable
A1	≥ 90%	≥ 70%	≥ 50%
A2, A3, A4	≥ 80%	≥ 50%	≥ 30%

<p>A1 Population reduction observed, estimated, inferred or suspected in the past and the causes of the reduction are clearly reversible AND understood AND ceased.</p> <p>A2 Population reduction observed, estimated, inferred or suspected in the past where the causes of the reduction may not have ceased OR may not be understood OR may not be reversible.</p> <p>A3 Population reduction, projected or suspected to be met in the future (up to a maximum of 100 years) [(a) cannot be used for A3]</p> <p>A4 An observed, estimated, inferred, projected or suspected population reduction where the time period must include both the past and the future (up to a max. of 100 years in future), and where the causes of reduction may not have ceased OR may not be understood OR may not be reversible.</p>	<p>based on any of the following:</p>	<p>(a) direct observation [except A3]</p> <p>(b) an index of abundance appropriate to the taxon</p> <p>(c) a decline in area of occupancy, extent of occurrence and/or quality of habitat</p> <p>(d) actual or potential levels of exploitation</p> <p>(e) the effects of introduced taxa, hybridization, pathogens, pollutants, competitors or parasites</p>
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Evidence:

Eligible under Criterion A3 as Vulnerable

The population reduction over the next 90 to 100 years is projected to be 20 to 30%, based on (c) and (e) above.

Subpopulations and habitat are considered at risk from disturbance, weed invasion and increasingly dry conditions from declining rainfall and consequent increase in severity and intensity of bushfires.

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Criterion B. Geographic range in the form of either B1 (extent of occurrence) and/or B2 (area of occupancy)			
	Critically Endangered Very restricted	Endangered Restricted	Vulnerable Limited
B1. Extent of occurrence (EOO)	< 100 km ²	< 5,000 km ²	< 20,000 km ²
B2. Area of occupancy (AOO)	< 10 km ²	< 500 km ²	< 2,000 km ²
AND at least 2 of the following 3 conditions:			
(a) Severely fragmented OR Number of locations	= 1	≤ 5	≤ 10
(b) Continuing decline observed, estimated, inferred or projected in any of: (i) extent of occurrence; (ii) area of occupancy; (iii) area, extent and/or quality of habitat; (iv) number of locations or subpopulations; (v) number of mature individuals			
(c) Extreme fluctuations in any of: (i) extent of occurrence; (ii) area of occupancy; (iii) number of locations or subpopulations; (iv) number of mature individuals			

Evidence:

Eligible under Criterion B1 as Endangered

The Extent of Occurrence (EoO) across the taxon's range is estimated to be 31 km², based on accepted, post-1970 records from the Victorian Biodiversity Atlas.

It is estimated to have one or two locations, as all key identified threats apply across its range and can rapidly affect all individuals of the taxon present. The major threat is fire, which might affect all sites or only a few.

It has a continuing decline in (iii) and (v) above, due to the identified threats, notably weed invasion.

Eligible under Criterion B2 as Endangered

The Area of Occupancy (AoO) across the taxon's range is estimated to be 12 km², based on 2 x 2 km grids derived from accepted, post-1970 records in the VBA. As above, it has one or two locations, and has a continuing decline in (iii) and (v) above.

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Criterion C. Small Population size and decline		Critically Endangered	Endangered	Vulnerable
Number of mature individuals		< 250	< 2,500	< 10,000
AND at least one of C1 or C2				
C1	An observed, estimated or projected continuing decline of at least (up to a max. of 100 years in future):	25% in 3 years or 1 generation (whichever is longer)	20% in 5 years or 2 generations (whichever is longer)	10% in 10 years or 3 generations (whichever is longer)
C2	An observed, estimated, projected or inferred continuing decline AND least 1 of the following 3 conditions:			
(a)	(i) Number of mature individuals in each subpopulation	≤ 50	≤ 250	≤ 1,000
	(ii) % of mature individuals in one subpopulation =	90 – 100%	95 – 100%	100%
(b)	Extreme fluctuations in the number of mature individuals			

Evidence:

Eligible under Criterion C1 as Endangered

It is estimated that there are 1,000 to 2,000 mature individuals, based on 1998 estimates of 1300 plants, and 2002 estimate of 1000 plants (Carter and Walsh 2006). In 2003 fires in the area saw a mass recruitment of this species, estimated to be as high as 2500 plants. However, this will naturally decline as the dense post-fire stands thin out.

There is estimated to be a continuing decline of 10 to 20% within two generations.

Eligible under Criterion C2 as Endangered

It is estimated that there are 1,000 to 2,000 mature individuals There is an estimated continuing decline, and the percentage of mature individuals in one subpopulation is 100%.

Criterion D. Very small or restricted populations		Critically Endangered	Endangered	Vulnerable
Number of mature individuals (observed or estimated)		< 50	< 250	< 1,000
D2. Only applies to the VU category Restricted area of occupancy or number of locations with a plausible future threat that could drive the species to critically endangered or Extinct in a very short time.		-	-	D2. Typically: AoO < 20 km ² or number of locations ≤ 5

Evidence:

Eligible under criterion D as Vulnerable

The taxon is estimated to be very restricted.

Criterion E (Quantitative Analysis) was not addressed as the taxon does not have a detailed Population Viability Analysis.



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References

Carter, O. and Walsh, N.G. (2006) National recovery plan for the Fern-leaf Baeckea *Babingtonia crenulata*. Department of Sustainability and Environment, Melbourne.

DEPI (2014). *Advisory list of rare or threatened plants in Victoria - 2014*. Department of Environment and Primary Industries, Melbourne.

SAC (2000). Flora and Fauna Guarantee Scientific Advisory Committee: Final Recommendation on a Nomination for Listing. Nomination No. 469 *Babingtonia crenulata*.

VicFlora (2017) Flora of Victoria, Royal Botanic Gardens Victoria: *Sannantha crenulata* Retrieved from: <https://vicflora.rbg.vic.gov.au/flora/taxon/21ad9b31-feb8-4d69-a802-c7e5db09af73>